

IN THE CLAIMS

1. (Currently amended) A method for forming in monolithic form a DRAM-type memory, including the steps of:

forming, on a single-crystal semiconductor substrate, parallel strips including a lower insulating layer, a strongly-conductive layer, a single-crystal semiconductor layer, and an upper insulating layer;

~~digging-forming~~, perpendicularly to the strips, ~~into~~in the upper insulating layer and ~~into~~in at least a portion of the semiconductor layer, first and second parallel trenches, each of the first and second trenches being shared by neighboring cells;

forming, in each of the first trenches, a first conductive line according to ~~the~~a strip width;

forming, in each of the second trenches, a pair of second distinct parallel conductive lines, insulated from the layers peripheral to the second trench;

filling the first and second trenches with an insulating material;

removing the remaining portions of the upper insulating layer; and

depositing a conductive layer,

wherein the first and second trenches are ~~dug-into~~ formed in the upper insulating layer and at least a portion of the semiconductor layer so that the first trenches have a minimum width, and the second trenches have a width which is twice that of the first trenches, two neighboring trenches being separated by a minimum interval, each first trench being surrounded with two second trenches and each second trench being surrounded with two first trenches.

2. (Currently amended) The method of claim 1, wherein the forming of the parallel strips includes the steps of:

forming on a first single-crystal semiconductor substrate a single-crystal semiconductor layer resting on a first insulating layer;

forming, on the semiconductor layer, a strongly-conductive layer, then a second insulating layer;

~~digging-forming~~ parallel trenches in the second insulating layer, the strongly-conductive layer, and the semiconductor layer, to partially expose the first insulating layer;

turning over and gluing the structure thus obtained on a second substrate; and  
removing the first substrate, whereby the first insulating layer becomes the upper layer of the structure thus formed and the second insulating layer becomes the lower layer underlying the semiconductor layer.

3. (Currently amended) The method of claim 1, wherein the first and second trenches are ~~dug into~~ formed to maintain between the strongly-conductive layer and the bottom of each of the first and second trenches a given thickness of the semiconductor layer.

4. (Currently amended) The method of claim 1, wherein the first and second trenches are ~~dug into~~ formed to partially expose the strongly-conductive layer.

5. (Currently amended) The method of claim 1, including simultaneously forming the first conductive lines at the bottom of each first trench and the pairs of second ~~insulated~~ conductive lines at the bottom of the second trenches.

6. (Currently amended) The method of claim 5, wherein the simultaneous forming of the first conductive lines and of the pairs of second conductive lines at the bottom of the first and second trenches includes the steps of:

depositing at the bottom and on the walls of the first and second trenches an insulating layer;

conformally depositing a conductive material to at least fill the first trench; and

removing the conductive material from the surface of the first insulating layer.

7. (Currently amended) The method of claim 5, wherein the first conductive lines formed at the bottom of the first trenches are not insulated from the peripheral semiconductor and/or conductor layers.

8. (Original) The method of claim 7, including the steps of:

conformally depositing an insulating material at the bottom and on the walls of the first and second trenches;

conformally depositing a first sub-layer of a conductive material;

performing a directional bombarding so that the conductive material is only bombarded on its sides in the second trenches;

removing by selective etching the sole non-bombarded portions of the conductive material in the first trenches;

removing the portions thus exposed of the insulating material previously deposited at the bottom of the first and second trenches;

depositing a second sub-layer of the conductive material to at least fill the first trenches;  
and

removing the conductive material from the surface of the first insulating layer.

9. (Currently amended) The method of claim 1, including, after the step of deposition of a conductive layer, the steps of:

level trimming, which results in the forming, between a first and a second neighboring trenches, of independent conductive surfaces in contact with the surface of the semiconductor layer;

depositing over the entire structure a thin dielectric with a high permittivity; and

depositing over the entire structure a conductive layer.

Please cancel claims 10-13.

Please add the following new claims 14-19.

14. (New) A method for fabricating a monolithic DRAM-type memory, comprising:  
forming, on a single crystal semiconductor substrate, parallel strips each including a lower insulating layer, a strongly conductive layer, a single crystal semiconductor layer, and an upper insulating layer;

forming, perpendicular to the strips, in the upper insulating layer and at least a portion of the semiconductor layer, first and second parallel trenches, each of the first and second trenches being shared by neighboring cells;

forming, in each of the first trenches, a first conductive line;

forming, in each of the second trenches, a pair of second conductive lines, insulated from layers adjacent to the second trench;

filling the first and second trenches with an insulating material;

removing remaining portions of the upper insulating layer; and

depositing a conductive layer.

15. (New) A method as defined in claim 14, wherein the first and second trenches are formed so as to maintain a given thickness of the semiconductor layer between the strongly conductive layer and the bottom of each of the first and second trenches.

16. (New) A method as defined in claim 14, wherein the first and second trenches are formed so as to partially expose the strongly conductive layer.

17. (New) A method as defined in claim 1, including simultaneously forming the first conductive lines in each first trench and the pairs of second conductive lines in the second trenches.

18. (New) A method as defined in claim 17, wherein simultaneously forming the first conductive lines and the pairs of second conductive lines includes:

depositing an insulating layer on the bottom and on the walls of the first and second trenches;

conformally depositing a conductive material to at least fill the first trench; and

removing the conductive material from the surface of the first insulating layer.

19. (New) A method as defined in claim 14, including, after depositing a conductive layer, the steps of:

level trimming the structure to produce independent conductive surfaces between first and second neighboring trenches;

depositing over the entire structure a thin dielectric with a high permittivity; and

depositing over the entire structure a further conductive layer.